

## NOTE ON A COLLECTION OF ODONATA FROM SOUTH ANNAM.

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( With one text-figure ).

## INTRODUCTION

The collection, which contains 119 specimens and has representatives of 34 species or about one fourth of the Odonate fauna of South Annam, is fairly representative of that part of Indo-China, although the smaller forms of *Zygoptera* are not in evidence. There appears to be one new species in the list which is detailed below, and I am a little in doubt with regard to an *Anotogaster* of which a female is the sole representative of its genus in the collection, and a very teneral male of *Megalestes* which was so compressed in the paper packet that it was impossible to make out the formation of the anal appendages.

[The small collection of Dragonflies which Major Fraser has kindly determined for us was made by Dr. Malcolm Smith and myself during a visit to South Annam in the spring of 1918.

Our camp at Daban was pitched near the Kronfa river where it makes exit from the mountains of Langbian, and when we went to bathe in its clear waters running among rocks and boulders it was our custom to take a net with us on account of the beautiful insects that flitted over the river; such were Nos. 24, 25, 27, 28, 29, 30.

Most of the other species from Daban were taken along a path running between the river and the forest through a patch of coarse grass-land interspersed with saplings and bushes; these were Nos. 1, 3, 4, 5, 6, 8—18, 20—22, 32—34. The species of *Neurothemis* were very common and mixed together in this place, perching on twigs and grass stems.

The few examples from Dran (Nos. 7, 15, 23, 26) were taken in grass country near water. Dalat, whence came Nos. 2, 9, 19 and 26, is grass country covered with pine forest.

The camp on Langbian Peaks was set on a grassy slope at the edge of mixed forest (No. 31).

Tour Cham is in the coastal plain of Phanrang; short grass dotted with thorny bushes (No. 33).

Collecting insects did not come within the plan of our visit to Annam and it was the beauty of the *Calopterygine* that inspired us to begin capturing them. I regret that I have to trust to memory for the few details of habitat given above.

C. BODEN KLOSS. ]

SYSTEMATIC.

ORDER. ODONATA.

Suborder. ANISOPTERA.

Family. AESCHNIDAE.

Subfamily. CORDULEGASTERINAE.

Genus ANOTOGASTER.

1. ANOTOGASTER KLOSSI, sp. nov.

One ♀.

The insect is in a dirty condition and I surmise that it was taken in the act of oviposition, as members of the genus are accustomed to descend into water for this purpose and so often get more or less soiled with mud in the process. It is of great dimensions, the total expanse being 140 mm., the length 118 mm., hindwing 67 mm., and abdomen including ovipositor 80 mm.

Head: eyes green, rest of head blackish brown marked with yellow as follows:—A streak across the face involving the lower part of epistome, the attached border of labrum and a large spot on the lateral lobes of the labium. The edge of the occiput is fringed densely with short, stiff, black hairs.

Prothorax blackish brown with a pyriform, subdorsal spot of yellow on each side.

Thorax dark brown marked with yellow:—a wedge-shaped antehumeral spot with the base upwards, approximating to its fellow above and diverging below, a broad stripe at the side, and the metepimeron largely yellow.

Abdomen a tawny yellow with the internodal joints and the area immediately in front of them brownish black. Legs black. Ovipositor very robust,

Wings hyaline, the basal portions richly saffronated to about halfway to node, the free border of this area curving obliquely back to the tornus. Antenodal nervures in forewing 27, postnodal nervures 19, antenodal nervures in hindwing 18, postnodals 20, 4 cells in trigone of forewing, 3 in that of the hind. Stigma black.

Taken at Daban, 650 ft, Phanrang Province, March 1918.

Genus *ICTINUS*.

2. *I. RAPAX*.

One ♂. Daban, 650 ft., Phanrang Province, March 1918.

Genus *MACROGOMPHUS*.

3. *M. ANNULATUS* Selys.

One ♂. Taken at Dalat, 5000 ft., Langbian Province, April-May 1918.

FAMILY LIBELLULIDAE.

Subfamily CORDULIINAE.

Genus *MACROMIA*.

4. *M. GERSTAKERI* Kruger.

One ♂. Daban, 650 ft., Phanrang Province, March, 1918.

Subfamily LIBELLULINAE.

Genus *LATHRECISTA*.

5. *L. ASIATICA ASIATICA* Ris.

One ♂ and one ♀. Daban 650 ft., March 1918.

The markings in this pair are very bright and distinct. The apices of the wings are tipped with brown and there is some saffronation along the costal margins. The specimens conform to the wet season type.

Genus *ORTIETRUM*.

6. *O. SABINA* Kirby.

One ♂ only. Daban, 650 ft., Phanrang Province, March, 1918.

7. *O. PRUINOSUM* Kirby. One ♂. Dran, 3,000 ft., Langbian Province, March 1918.

Genus *BRACHYDIPLAX*.

8. *B. FARINOSA* Kirby.

One ♂, Daban, 650 ft., Phanrang Province, March 1918.

The specimen appears to be fully adult but bears only the slightest trace of pruinescence on the thorax and none at all on the abdomen. The colour of the latter and thorax is a golden or reddish brown.

Genus *DIPLACODES*.

♀. *D. TRIVIALIS* Rambur.

Two ♂ and one ♀. Same locality as the last.

Genus *NEUROTHEMIS*.

10. *N. INTERMEDIA INTERMEDIA* Ris.

Five ♂ and four ♀. The basal marking in the males is of a very light colour.

11. *N. FLUCTUANS* Hagen.

Three ♂. The colour of the wing varies from a rich shade of amber to a deep chocolate brown, apparently due to the varying ages of the specimens. The extent is about the same in all.

12. *N. TULLIA TULLIA* Kirby.

One ♂ only,

13. *N. TULLIA FERALIS* Selys.

One ♂ and one ♀.

14. *N. FULVIA* Drury.

One ♀ and four ♂. The specimens are unusually small as compared with Indian species. The males have only the extreme tip of the wings tipped with brown, the hyaline space adjoining being correspondingly enlarged, thus resembling species from Burma. This feature appears to be constant and if the type specimen is from Bombay, they must be regarded as a distinct variety. The ♀ is the smallest I have seen of its kind. All the above five specimens of *Neurothemis* were taken at Daban, Phanrang Province, 650 ft. March 1918.

Genus *CROCOTHEMIS*.

15. *C. SERVILIA* Brauer.

Two ♂. Same locality as the last.

16. *C. ERYTHRAE* Brauer.

One teneral ♂. Daban, 650 ft., Phanrang Province, March

1918. Teneral species of this insect so closely resemble *servilia* that this may possibly be a teneral form of that species.

Genus BRACHYTHEMIS.

17. B. CONTAMINATA Brauer.

Eight ♂ and four ♀, taken in the same locality as the last.

Genus ZYGONYX.

18. Z. IRIS Selys.

Three ♂ and one ♀.

Genus TRITHEMIS.

19. T. FESTIVA Brauer.

One ♀ only. Dalat, 5000 ft., Langbian Province, April-May 1918.

The altitude at which this insect was taken is greater than usual, it being essentially a plains species. From 3000-4000 ft. is its limit in Ceylon and India.

Genus HYDROBASILEUS.

20. H. CROCEUS Karsch.

One ♀ only. Daban 650 ft., Phanrang Province, March 1918.

Genus THOLYMIS.

21. T. TILLARGA Hagen.

One ♂ only. From the same locality as the last.

Genus RHYOTHEMIS.

22. R. PHYLLIS PHYLLIS Hagen.

One ♂ and one ♀. From same locality as last.

23. R. PLUTONIA Selys.

One ♂. Dran, 3000 ft., Langbian Province, March-May 1918.

SUBORDER ZYGOPTERA.

Family CALOPTERYGIDAE.

Subfamily CALOPTERYGINAE.

Genus NEUROBASIS.

24. N. SINENSIS, Linn.

Three ♂. Daban 650 ft., Phanrang Province, March 1918.

## Genus VESTALIS.

25. *V. APICALIS* Selys.

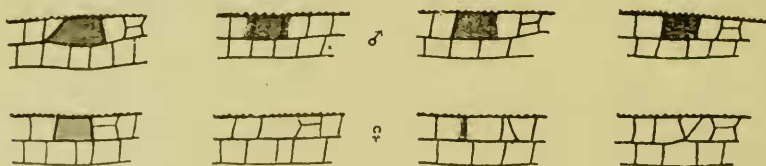
Six ♂ and seven ♀. The apical marking varies in density but none of the specimens are as dark as specimens from Malabar, India.

## Genus MNAIS.

26. *M. EARNSHAWI* Williamson.

Four ♂ and four ♀. Some of the specimens are in a general condition. From Dran 3000 ft. and Dalat 5000 ft., Langbian Province, March to May, 1918.

The eight specimens of this very interesting insect exhibit well the remarkable polymorphism of the rudimentary pterostigma, which is clearly undergoing a gradual reduction. Indeed, by a comparative examination of the material at hand, it is possible to trace the complete process of reduction from a moderately large and well-defined pterostigma to a complete obsolescence as found in *Vestalis*. In the same specimen, the pterostigma is seen to vary in all 4 wings,



Pterostigma of *M. earnshawi*, arranged in series to show the gradual reduction which is taking place.

especially in the females, in one of which it is entirely absent and in two other wings it is merely indicated by the faintest shading about one of the postnodal, apical nervures. In other wings, it is of the palest grey or entirely hyaline so that some difficulty is experienced in determining which cell represents the pterostigma. In the males it is a deep blood-red and may overflow its bordering nervures so that it appears to be traversed by the same. In reality this appearance is apparently due to a gradual contraction in the size of the stigma so that the bordering nervures are being left behind, a pro-

cess which is taking place both proximally and distally. In one of the females the process of reduction is being helped by an approximation of the bordering nervures so that it is seen to be triangular in shape due to the nervures having met posteriorly.

Genus PSEUDOPHOEA.

27. *P. VARIEGATA* Rambur.

Five ♂ and two ♀.

28. *P. MASONI* Selys.

Eleven ♂. Both species from Daban, 650 ft., Phanrang Province, March, 1918.

Genus RHINOCYPHA.

29. *R. FULGIDIPENNIS* Guerin.

Five ♂ and two ♀.

30. *R. PERFORATA PERFORATA* Percheron.

Two ♂: Both species from the same locality as the last.

FAMILY LESTIDAE.

Subfamily LESTINAE

Genus MEGALESTES.

31. *M. MAJOR* Selys.

One teneral ♂. Langbian Peaks, 6000 ft., South Annam, April, 1918. The species is doubtful as the specimen is very teneral and much compressed in the paper packet.

Genus LESTES.

32. *L. VIRIDULA* Rambur.

Two ♂ and one ♀. Dran 3000 ft., Langbian Province, March-May, 1918.

FAMILY AGRIONIDAE.

Subfamily AGRIONINAE

Genus ISCHNURA.

33. *I. SENEGALENSIS* Rambur.

Four ♂ and two ♀. Tour Cham, Phanrang Province, March-May, 1918. Sea level.

GENUS CERIAGRION.

34. *C. ERUBESCENS* Selys.

Two ♀ and one ♂. Daban, 650 ft., Phanrang Province, March 1918.